

Michael Klein

Child Health Care in Canada

SUMMARY

Canadian family medicine and pediatrics have much in common, yet increasing interspecialty competition in the U.S. threatens to spill over into Canada. Geographic, demographic and manpower considerations make it imperative that family physicians continue to provide most of the health care for children in this country. Restrictive entry into traditional specialty programs, subspecialty domination of pediatric training and a shift in the age structure of pediatricians vs family physicians will ensure that the primary care of children will remain with Canadian family doctors. Research has revealed no superiority of one type of provider. Nevertheless the training of family physicians in behavioral and ambulatory areas could be improved. Maintenance of obstetrical activity is key to continued involvement in child health. Areas of collaboration between the two disciplines are explored. (Can Fam Physician 1985; 31:955-967.)

SOMMAIRE

Au Canada, la pédiatrie et la médecine familiale ont beaucoup de choses en commun; il ne faut pas oublier l'augmentation de la compétition interspécialités aux États-Unis qui risque de se propager au Canada. À cause de considérations géographiques, démographiques et de main-d'œuvre particulières à notre pays, il est impératif que les médecins de famille continuent de prodiguer la majeure partie des soins pédiatriques. La restriction imposée à l'admission dans les programmes traditionnels de spécialités, la domination des surspécialités dans la formation en pédiatrie et l'écart progressif entre la structure d'âge des pédiatres et celle des médecins de famille vont favoriser que les soins pédiatriques de première ligne demeureront l'apanage des médecins de famille canadiens. La recherche n'a pas réussi à démontrer la supériorité de l'un des deux modèles. Il est cependant possible d'améliorer la formation des médecins de famille dans le domaine des soins ambulatoires et des attitudes. Le maintien d'une pratique obstétricale constitue la clé d'une implication continue au niveau des soins pédiatriques. L'article explore certaines avenues de collaboration entre ces deux disciplines.

Key words: Family medicine, pediatrics, training

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PEDIATRICS AND family medicine are social in their orientation and disciplines which emphasize personal factors more than techniques or procedures. Perhaps this very similarity may lead to some uneasiness or competition—some would say family-like feuding. Paradoxically, the two disciplines have more in common with each other than each has with any other branch of medicine, and each has much to gain from close cooperation.

Canadian geography and history have caused pediatrics and family medicine in this country to be fairly supportive of each other. However, recent physician oversupply, particularly in the U.S.,¹ has generated interspecialty conflict that may tend to spread northwards. In fact, pediatric attacks on U.S. family medicine have been quite direct: the American Academy of Pediatrics (to which many Canadian pediatricians belong) has urged its membership to expand both the scope and age limits of the discipline.^{2,3}

While it is hard to ignore events south of us, the American and Canadian situations are so different as to be non-comparable.^{1,3-5} Child health care by family physicians or pediatricians is becoming labelled as a quality of care issue in the U.S., when it is really one of politics and economics.^{2,3}

Manpower Considerations (Table 1)^{1,4,6}

In Canada, there are approximately 20,000 family physicians, compared to almost 60,000 in the United States. There are approximately 1,500 pediatricians in Canada, including the subspecialties, compared to approximately 24,000 U.S. primary care or general pediatricians and 35,000 pediatricians including subspecialists. In the United States there are 2.3 family physicians for each general or primary care pediatrician, while in Canada there are 13 family physicians for each pediatrician. These greatly disparate ratios are maintained despite the similarity of the two countries' physician to population ratios—1:540 for Canada and 1:580 for the United States.

The family physician to population ratio in Canada is less than half that of the United States, but the pediatrician to population ratio is approximately 1:16,000 in Canada and 1:9,200 in the United States. By the year 2000, this ratio is projected to drop precipitously to one pediatrician for every 6,500 people in the U.S. It is further projected that there will be a surplus of more than 5,000 pediatricians—in other words, one in eight pediatricians will be redundant.¹

The seepage of the U.S. primary care controversy northwards can be demonstrated through the results of a survey among all pediatric and family medicine departments in Canada.⁵ The concept of the pediatrician as consultant was increasing in only five of 16 universities in Canada. In Quebec, where pediatricians are among the most numerous on a population basis, the consultant model is apparently non-existent. Nine of the 16 chairmen of pediatrics departments in Canada acknowledge increasing competition between pediatricians and family physicians, along the lines seen in the United States.

Geography and The Family Practice Imperative

In the U.S., family doctors lost the urban high ground to specialists.^{7,9} In Canada, the extreme example was Montreal—'the Boston of Canada', a place where family physicians rarely practiced primary care for young children. In small-town Canada, however, practice and practical issues determined the pattern of care for children. It takes roughly 2,000 children to support one pediatrician,¹⁰ and a group of three pediatricians would be needed for a coverage group, so a population base of 6,000 children would be required. This number would be found only in large communities. In Canada 27.5% of family physicians practice in communities under 25,000 population while only 3.7% of Canadian pediatricians are involved in communities of this size.¹¹

In Canada as a whole (Fig. 1) family physicians are uniformly distributed across the country in communities of all sizes.¹¹ Family physicians are in only slight 'excess' to population in communities over 500,000—and only in slight 'deficit' in communities less than 10,000.¹¹ Histograms

for each province are available on request.

Canadian pediatricians, however, are clearly concentrated in the large metropolitan areas of the 16 medical schools (Fig. 2). This is the general pattern across Canada, independent of the number of family physicians for each pediatrician (Fig. 3)¹¹ or the population for each pediatrician (Fig. 4).¹¹

In British Columbia and Ontario, which have similar pediatrician to population ratios to Quebec, there is more of a consultative pediatric model, illustrating the point that the issues are complex, involving more than simple manpower statistics. In British Columbia, there are more family physicians relative to pediatricians than in Quebec, but British Columbia pediatricians distribute into all but the smallest communities. Ontario looks very much like British Columbia in terms of population for each pediatrician, yet the consultative model is much more developed in British Columbia, where pediatricians spend 80% of their time in consultative or referral practice. In B.C. the health care scheme requires patients to see a family doctor before pediatric consultation, if the pediatrician is to bill the higher consultant fee.

Who Cares For Canadian Children? (Fig. 5)¹²

Family physicians in Ontario and Saskatchewan provide care for 70-80% of visits from children aged 0-14. In Manitoba, this figure is approximately 65%, and in Quebec approximately 50% (on the increase). If one looks at well child care alone, in 1983 Saskatchewan well-child visits were carried out by family doctors in 94% of cases and in other provinces where

the data is available, the well child care figure is generally well over 60%.¹² Quebec and Manitoba provide especially useful perspective, because pediatricians are in generous supply there and principles derived from these provinces are even more pronounced for the rest of Canada.

Even in Quebec,¹³ family practice services to children are quite significant in the aggregate, although they may be somewhat limited in the practice of an individual family physician (Table 2).¹³ While 15.2% of visits to individual family doctors in Quebec in 1981 were for children up to age 14, that figure rises to 21% when adolescents are included. Pediatricians on the other hand tend to spend most of their time treating the age group up to age four, at which point their activity begins to decrease. Only slightly more than 10% of their activity involves older children and adolescents. However, comparing *all* family physicians with *all* pediatricians (Table 3)¹³ we see that only in the first year of life are most child visits looked after by pediatricians. Thereafter, the involvement of the total group of family physicians in Quebec rises steeply; few older children and adolescents are looked after by pediatricians and fully 96.5% of visits by the 15-19 age group are made to family doctors. This age group is the new territory aspired to by primary care pediatrics in the United States and some attention is being paid to this age group within Canadian pediatrics as well.

A look at the age structure of Quebec pediatricians and family physicians (Fig. 6)¹³ will demonstrate that, even in Quebec, there will soon be a dramatic shift of child care toward family physicians. The bulk of primary care pediatricians in Quebec are

TABLE 1
Ratios of Pediatricians and Family Physicians In the U.S. and Canada

	CAN (1980)	U.S. (1978)
No. FPs	15,682*	54,350
No. general pediatricians	1,518++	23,800
FP: pediatrician	10.3:1**	2.3:1
Physician: population	1:540	1:580
FP: population ratio	1:1536***	1:4000
Pediatrician: population	1:15,869	1:9,200+

* 20,000 in 1984

** 13 to 1 in 1984

*** Corrected 1:1392

+ Projected 1:6500 year 2000

++ All pediatricians in Canada

aged 40-60 and operate at a ratio of one pediatrician for six to nine family physicians. Pediatricians age 30-39 operate at a ratio of one pediatrician for 10-18 family doctors—a ratio quite similar to that experienced by the oldest pediatricians who functioned as consultants before the age of superspe-

cialization. These ratios should be kept in mind while planning training programs for the upcoming generation of specialist pediatricians.

Though Manitoba has similar ratios to Quebec for family doctors and pediatricians, two thirds of child visits between ages 0-14 are looked after by

family doctors (Table 4)¹⁴ but this figure has dropped from 67.9% to 63.9% between 1975 and 1983. During this time period, the number of pediatricians in Manitoba has increased by 19% while family physicians have increased by only 12%.

Furthermore the absolute number of

Fig. 1.
Distribution of family physicians in Canada by size of community. The cross-hatched area represents relative physician 'excess' compared to the proportion of the population living in communities of this size. The solid area represents areas where the population is in relative 'excess', or a relative 'deficit' of physicians.

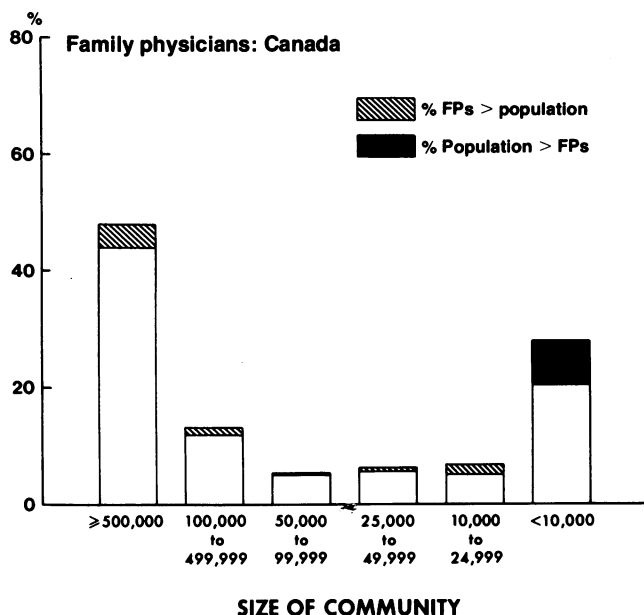


Fig. 2.
Distribution of pediatricians in Canada by size of community. See legend, Fig. 5 for structure.

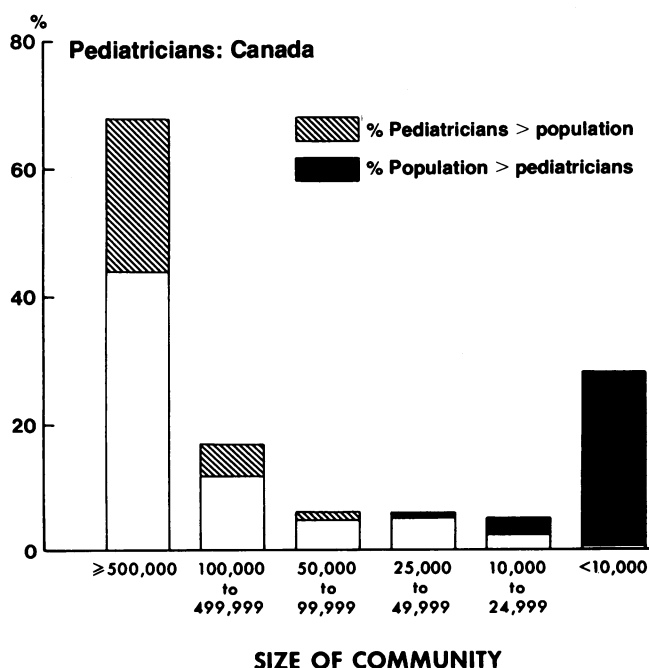


Fig. 3.
Number of family physicians for each pediatrician 1979-80 by province.

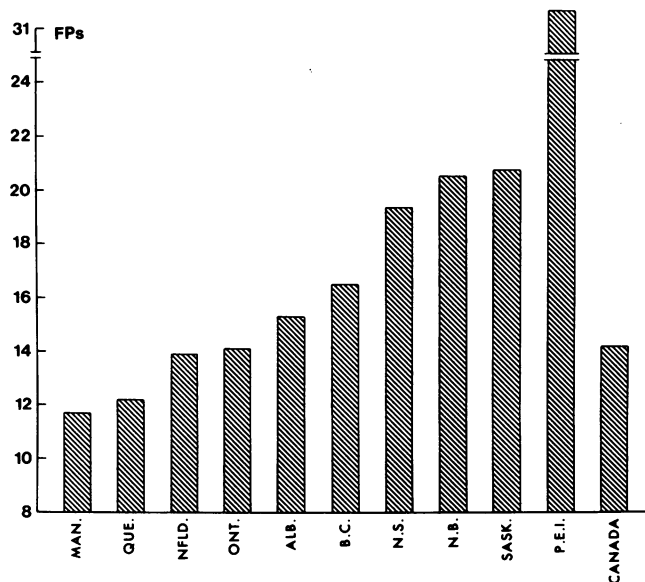
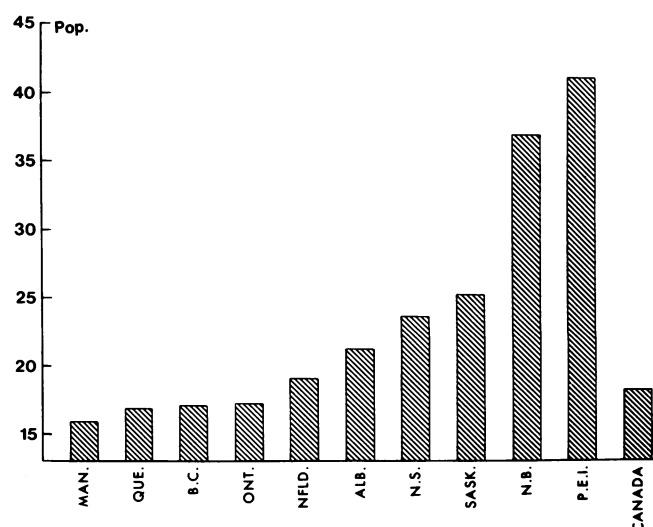


Fig. 4.
Canadian population for each pediatrician (in thousands) 1979-80 by province.



visits to Manitoba family physicians are dropping, while their visits from older individuals are steeply rising.¹⁴ Manitoba pediatricians, on the other hand, are picking up the slack in all child age groups, in both rural and urban areas. For example, in rural areas, visits from children aged 0-14 seen by family doctors dropped from 28.2% to 24.4%, even though rural family physicians had a significantly higher percentage of child health care than their urban counterparts.

Table 4 also shows changes in practice, principally by family physicians, for the marker conditions of circumcision and tonsillectomy. The minute number of Pap smears by Manitoba pediatricians is included to make the point that, even in a pediatrician-rich province, adolescent gynecological needs are not in the domain of pediatricians. This is one area of the so-called 'new morbidity' for which pediatricians have little training.

The clearest picture of family medicine dominance in child health care is seen in British Columbia¹⁵ where 96% of routine newborn care is carried out by family physicians versus 1.5% by pediatricians, again reflecting the different consultative model operating in British Columbia.

The Pediatric Content of Family Practice

Child health care has altered dramatically over the past 50 years.¹⁶ Ac-

cidents, congenital anomalies and malignancies now top the list of illnesses. With the development of effective preventive strategies, general improvement of nutrition and socio-economic conditions and control of the major infectious diseases through antibiotics and other means, child health supervision has become a manageable task. The unsolved area remains the border between behavioral medicine and mental health and involves socio-economic considerations wherein both family physicians and pediatricians have shown themselves to be not only inadequately prepared, but also ineffective. Most infectious diseases are relatively easily managed and/or self-limited. Thus, the new challenges are in preventive, behavioral, social and community-oriented care. However, as society becomes more doctored, there is a danger of too much child health supervision, creating less secure and possibly more dependent, neurotic parents.

Increasingly, there is at least as much content on child health, community, behavioral and social medicine in family medicine training programs as within many traditional pediatric training programs. Pediatric training in Canada is more geared to subspecialty and hospital needs. Neonatology and intensive care tend to be the central pieces in the program, at the expense of primary care and developmental/behavioral areas.

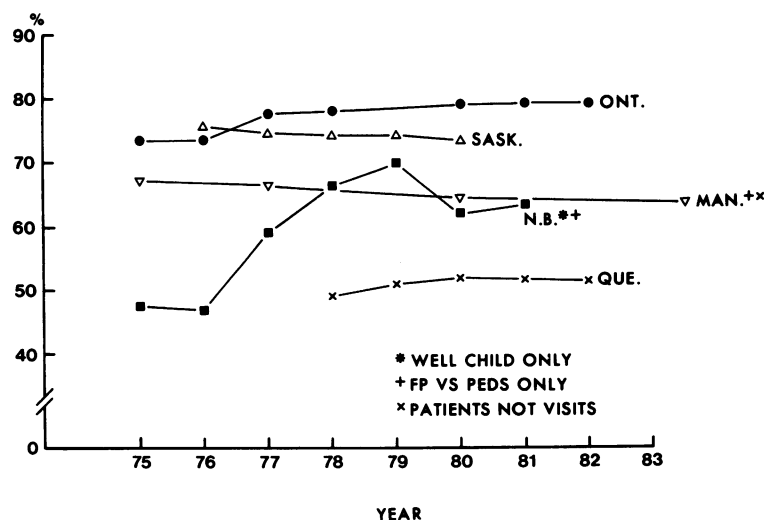
In a 1984 U.S. academic follow-up comparing pediatric training with that received in 1978, Weinberger and Oski¹⁷ reported: "little if any changes . . . in the traditional emphasis on inpatient and neonatal training." Nor did they find "any trend indicating increased emphasis on training experiences in the [new morbidity]". In Canada, there is even less training for pediatricians in these aspects of primary care, making it essential that family medicine improve training and service in this area.

There is remarkable similarity in the working day of the pediatrician and the family physician. U.S. pediatricians spent 23% of their time in well child care, compared to 25% of family doctors' time spent on the care of well children.^{18, 19} Since children, especially young children, occupy relatively less of the family physician's time, some sort of flow sheet or memory device is desirable in the office. Pediatricians might also benefit from these devices.^{20, 21} Within child visits, pediatricians and family doctors also spend a similar amount of time seeing children with otitis media (7-8%) and asthma (1.6-1.7%).^{18, 19} The top 25 diagnoses made for children visiting both pediatricians and family physicians are essentially the same.^{18, 19}

Common things are commonly seen and they are relatively simple to manage, so well trained family physicians and even nurse practitioners can look after them. Some primary care pediatricians are bored, unchallenged and frustrated: they are untrained in some respects, overtrained for the routine aspects of their job in others, and inadequately trained for the so-called new morbidity. Furthermore, pediatricians lack the family context to enter the life of the family where the new behavioral challenges lie. That is not to say that pediatricians fail to take the family into account. Of course many are family-oriented, but conscientious pediatricians must create the context, while family physicians cannot escape the family. Nevertheless, academic pediatricians have continued to make key contributions to our understanding of the family in health and disease.

There is already some evidence that the new Canadian family practice graduates are increasing their share of pediatric care. Parker,²² in his national survey of 437 certificants of the College of Family Physicians of Canada, showed that residency trained family

Fig. 5.
Visits to family physicians by children aged 0-14 by year and by selected provinces.



physicians spent 24% of their time on child health problems and they consulted less with specialists than their predecessors did. Marsh found that 78% of Canadian family physicians held pediatric admitting privileges.²³ In 1982, Owen²⁴ found that of Ontario family physicians, 40% cared for children with simple problems, 41% looked after very sick children with consultation, and only 19% did no pediatrics.

Obstetrical/Pediatric Interaction

Family physicians who are active obstetrically are more likely to be active in child health.²⁵ Obstetrical activity in family medicine is by no means uniform throughout Canada; those provinces with diminishing obstetrical activity are generally the provinces with parallel reductions in pediatric activity.²⁵ Thus, the concern of the College of Family Physicians of Canada for maintenance of obstetrical involvement by family physicians has far-reaching implications for the total structure and content of family practice in Canada.

Perinatal mortality has fallen to a common level in all provinces— independent of whether pediatricians/obstetricians vs. family doctors are the principal perinatal health workers (Fig. 7).²⁶ This is an example of the pediatric (perinatal) message getting effectively marketed to all in-

involved in maternal and child health, as were immunization and the management of childhood infectious diseases earlier effectively marketed by pediatricians.

Proper Activity For FPs?

Some Canadian family practice programs seem to be advocating a diminished direct involvement in well child care, by delegating this activity to nurses and nurse practitioners. Two reports^{27, 28} have suggested that nurses are more suited to this role than are family doctors. Evidence has also been presented to suggest that mothers prefer dealing with nurses.²⁸ Both these studies emanate from university family practice units where nurses have a central role for reasons of continuity and organization.

It is not surprising that mothers might prefer a competent nurse to a young resident with no experience in raising children. The precious atmosphere of a family medicine teaching unit, however, is not the practice world. The challenge is for nurses in teaching units to communicate their skills and approaches to family medicine residents and for the two to learn an appropriate collaborative relationship that will be transferable into subsequent practice.²⁹

Research Into 'Who Does It Better'

Few research studies have been car-

ried out on the quality of child health services as delivered by pediatricians compared with family physicians. Since quality of care is so difficult to measure as an outcome,³⁰ most studies have looked at the *process* of care as a measure of quality. Research about family practice, as carried out by departments of pediatrics, has generally been designed to test the hypothesis that pediatricians are better at caring for acute childhood illness than are family physicians. These studies are difficult to do and to evaluate because events that can be classified as adverse outcomes are so rare as to require enormous numbers; the bulk of childhood illnesses are self-limited and little modified by the interventions of either pediatricians or family doctors.

Starfield's first study,³¹ published in 1981 and based on data collected in the National Ambulatory Medical Care Survey for 1973-74, shows the problem of comparing the older family doctor with pediatricians not at that time well prepared for primary care. There were insufficient numbers of newly trained family physicians in her sample. Her findings could be summarized as follows:

1. Pediatricians saw more children than did family doctors for well child care in the young age groups, but less in the older age groups.
2. The distribution of reasons for visits to FPs and pediatricians were the same.

Fig. 6.
Numbers of Quebec family physicians and pediatricians in 1982, by age group. The ratios represent the number of FPs for each pediatrician in each age group.

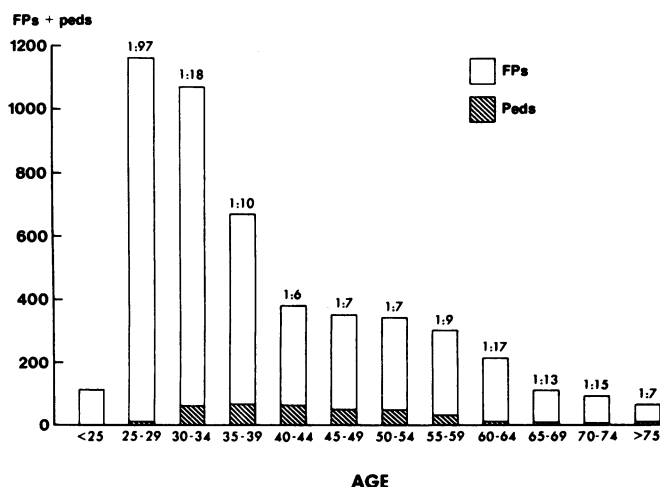
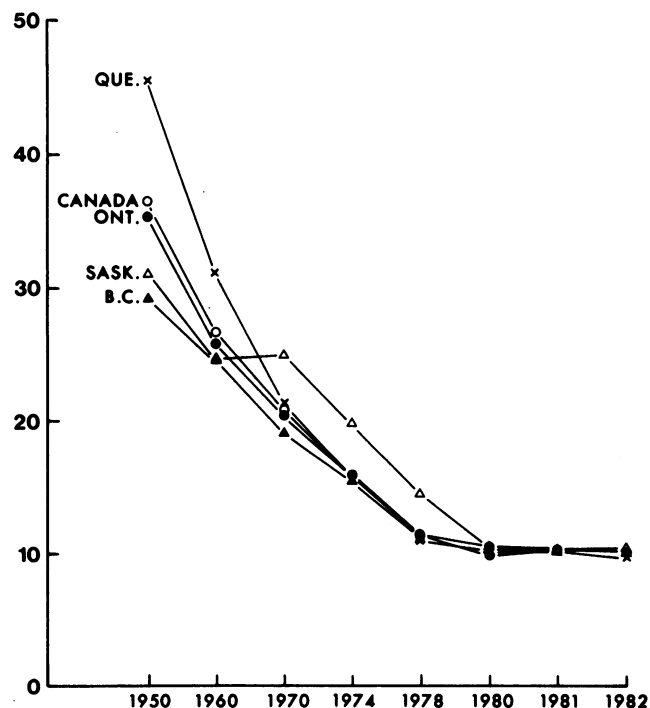


Fig. 7.
Perinatal mortality rate
Canada and selected provinces by year.



3. Pediatricians used more lab tests (principally cultures) and fewer drugs, particularly for fever and sore throat. The FPs were, nevertheless, judged to have saved the United States \$9.7 million in testing costs.

4. FPs were considerably more accessible.

5. FPs tended to give less counselling, except for infants age 0-2 brought for well child or general examinations.

6. Pediatricians use the telephone more frequently than family doctors.

7. Pediatricians provided more longitudinal care.

In 1982, Starfield³² looked at time spent in the encounter. Pediatricians spent approximately 10.5 minutes in an office visit, versus 8.5 minutes by FPs. She was careful to avoid equating time with quality: this is especially important when considering the different practice styles of FPs compared to pediatricians. For example, it is inappropriate to consider a couple of minutes less time with mothers as clinically significant in the first year of life, considering that most FPs know the

mother through seeing her for pre- and postnatal visits,—not to mention the critical life event of the delivery itself when the FP has been privileged to attend.

There are two important Canadian comparisons:

1. Kramer et al., 1982,³³ compared FPs functioning in a general emergency room with pediatricians functioning in the emergency room of a children's hospital. They defined an adverse outcome as "a potentially preventable complication or delayed diagnosis, treatment or referral". The overall results showed "no evidence of a protective effect afforded by private pediatric care". The authors concluded that "pediatricians and general practitioners appeared equal in recognizing adverse acute illness and in the avoidance of preventable complications". When this study was presented at a meeting of the Society for Pediatric Research, a pediatrician in the audience asked—perhaps facetiously—if anything could be done to convince Dr. Kramer not to publish this work. It

has since been published in a journal not commonly read by practicing physicians and is titled in such a way as to be difficult to discover as a contribution to the 'who can do it better' debate. The emphasis was placed on methodology.³⁴

2. In 1982 Leduc and Pless³⁵ prospectively studied 259 children under age ten seen in the emergency room of a children's hospital versus a general emergency room staffed by FPs (most of whom were not residency trained). There were no significant differences in outcomes of febrile illness seen by the FPs versus the pediatricians. They did, however, report "trends" relating to unresolved symptoms and subsequent hospitalizations favoring pediatricians. The trends were not statistically significant. FPs used fewer cultures and more X-rays. The authors called for more studies.

The trends are so weak as to warrant no comment and the doctors studied were resident pediatricians versus the more experienced GPs. The conditions alleged to have contributed to the



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trend, in my opinion, cannot be modified by the care provided by either type of provider. The editorialist commenting on the article urged us not to do more studies "... through the laborious collection of data to establish the superiority of one approach over the other, but to look at clinical decision making by both GPs and pediatricians and to attempt to determine why there was differential laboratory utilization as well as different clinical approaches to the same problem".³⁵

In Rosenblatt et al.'s recent study³⁷ of the content of family practice in the United States, there was a great narrowing of the difference between pediatricians and family physicians concerning utilization of laboratory tests. The newer certified family practice graduates did many more cultures and many fewer X-rays, demonstrating that a common standard of care is evolving.

The Future

Child health care as carried out by family physicians in Canada seems secure. The issue is not the infrequent hospitalization of very ill children (where pediatricians are pre-eminent) but the management of children's illnesses and problems in the context of the family, community and society. The geographical issues in the end make it highly unlikely that the dominant pattern of primary care to Canadian children by family physicians will be altered, yet there can very well be a good deal of professional chauvinistic unpleasantness between Canadian pediatricians and family physicians if Canadian pediatricians inappropriately adopt United States models. In Can-

ada, family physicians will have to move increasingly into ambulatory and behavioral areas. Canadian pediatricians, except in certain rare geographical areas, are urban, often hospital-based subspecialists and inaccessible to large numbers of rural Canadian children.

A recent survey⁵ indicated wide support among pediatric and family medicine chairmen for increased involvement of family physicians in the so-called new morbidity. At present, whilst family medicine residents get good training in the behavioral, psychosocial and related areas, most family medicine chairmen felt that more was needed. Pediatric trainees get some, and in certain universities a fair amount, of such training, but pediatricians cannot be expected to provide anything other than consultative care for the majority of Canadian children. Many other writers and some representatives of organized and academic Canadian pediatrics support the consultative model.⁵ However, calls for the adoption of a more consultative model have gone largely unheeded in those areas where pediatricians are 'in excess'. The consultative model has been utilized where geographical and medical demographic conditions have made it necessary, and where economic conditions and incentives have helped.

Conclusion

The challenge for both pediatricians and family physicians is to provide health care and guidance in these different areas without contributing to the unnecessary medication of the population. As family physicians or pediatri-

cians, we do not 'own' the behavioral area any more than do teachers, parents, psychologists, nurses, and social workers. It is our job to work collaboratively in a task-oriented fashion³⁸ with all who are interested in the promotion of child health. To do so is to be genuinely child, as opposed to professional, advocates.

Acknowledgements

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TABLE 2
Percentage Practice Distribution of the Normative Pediatrician vs Family Physician According to Medical Services Provided in Quebec, 1981

Pts.' Age Group	Peds	FP		
0-1	35.0	2.4	15.2	21.1
1-4	33.4	4.9		
5-9	18.3	4.1	}	}
10-14	8.5	3.8		
15-19	2.8	6.9		
Other	2.0	77.9		
	103.8	100		

* Based on Régie Billing Statistics

TABLE 3
Percentage of all Services to Children in Each Age Group, Quebec 1981*

Pts.' Age Group	Peds	FP
0-1	55.9	44.1
1-4	37.1	62.9
5-9	27.7	72.3
10-14	16.2	83.8
15-19	3.5	96.5
Other	0.6	99.4

* Based on Régie Billing Statistics

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TABLE 4
Child Health Care Statistics in Manitoba, 1975 and 1983

	1975	1983	% Change
No. pediatricians	67	80	(+19)
No. family physicians	779	871	(+12)
No. child visits to pediatricians and family physicians*	370,872	359,599	(- 3)
No. child visits to pediatricians*	119,016	129,662	(+ 9)
No. child visits to family physicians*	251,856	229,937	(- 9)
% child visits by family physicians	67.7	63.9	
No. child tonsillectomy by family physicians	1,765	573	(-68)
No. newborn circumcision by pediatricians	32	82	(+156)
by family physicians	2,478	1,062	(-57)
% circumcisions performed by family physicians on male infants delivered by them	46	21	(-54)
No. Pap smear (all ages) pediatricians	98	138	(+41)
family physicians	97,878	116,920	(+20)

* Children aged 0-14